

DENVER WATER

NORTH SYSTEM RENEWAL WATER TREATMENT PLANT (NSRWTP)



NSRWTP Design Packages #1-3 Pre-Proposal Meeting

*Denver Police Protective Association (PPA) Event Center
Denver CO, May 26, 2016*

Agenda

- Introduction
- Design Package (DP) Overview
- Next Steps
- Questions

NSRWTP Project Objectives

- **Sustainability:** Achieve the highest level of sustainability certification possible in a cost-effective and feasible manner
- **Modularity:** Parallel operation/outages while plant is in service
- **Ease of Access and Maintenance:** Safe, efficient, flow of traffic, equipment access and future build-out
- **Safety:** Personnel safety during construction and long-term operations
- **Personnel:** Streamlined operations and control
- **Schedule:** Operational by 2023
- **Budget:** Accomplish project objectives within budget

North System Renewal Water Treatment Plant Site

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Proposed C470 Extension

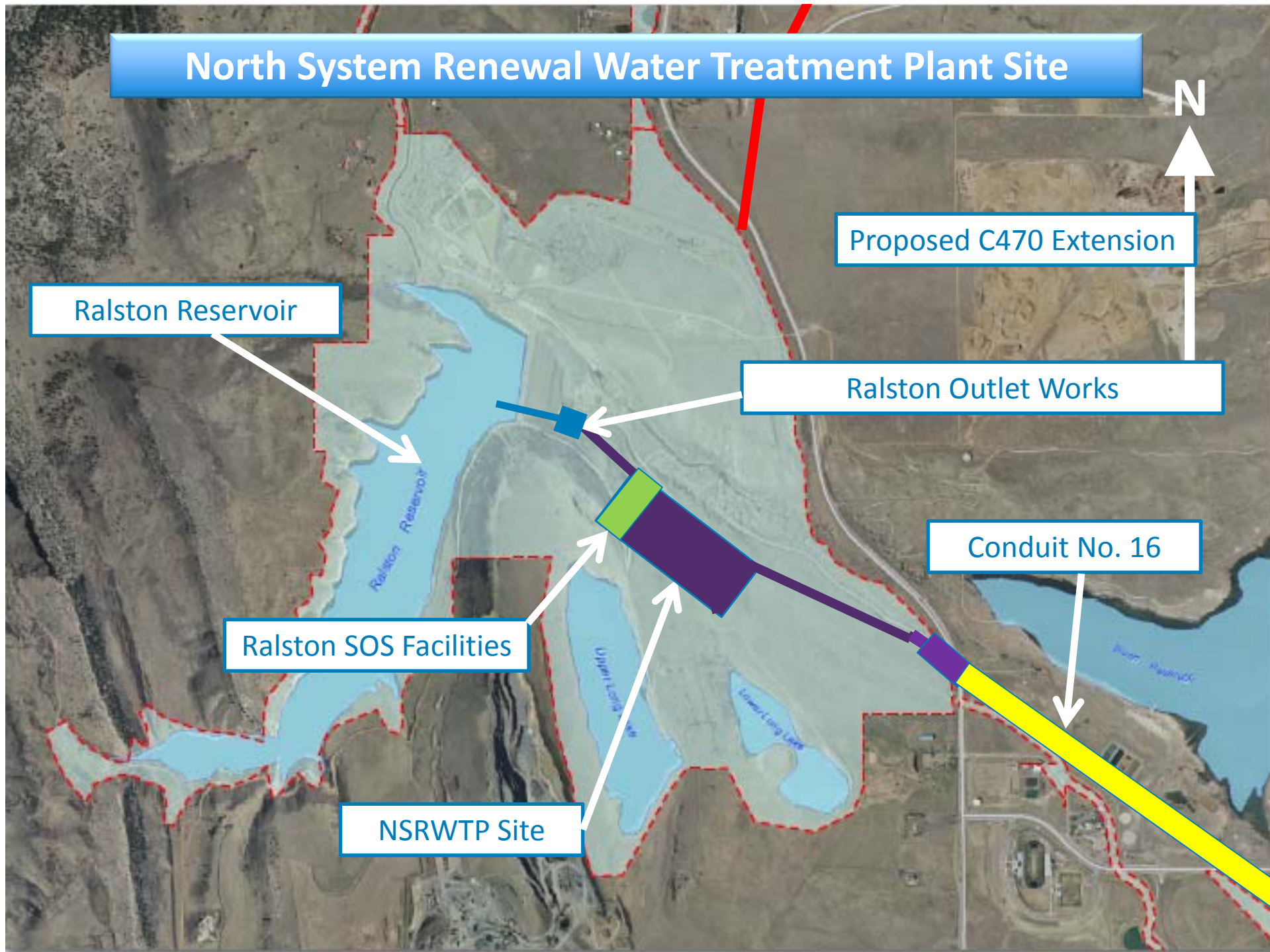
Ralston Reservoir

Ralston Outlet Works

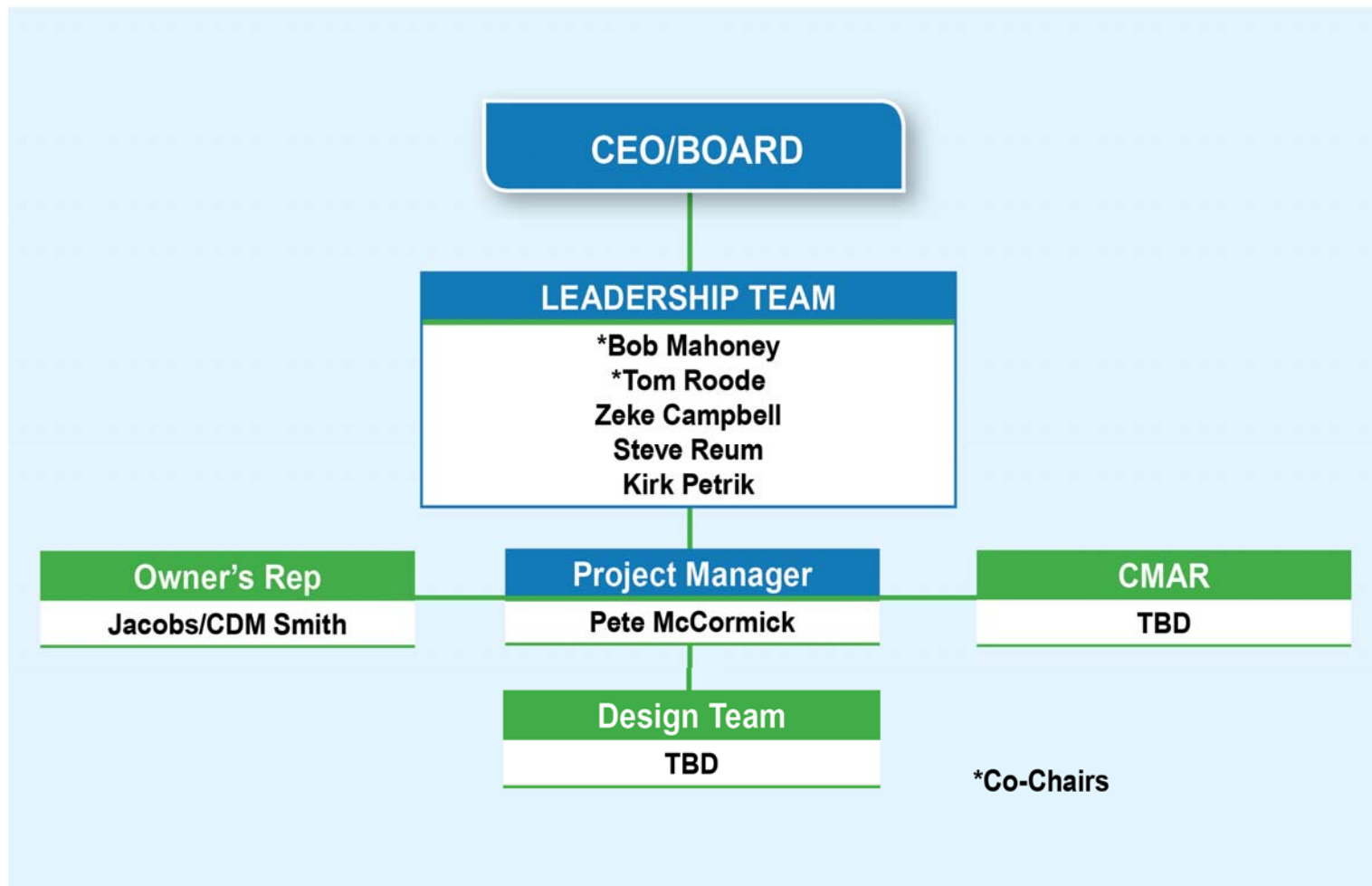
Ralston SOS Facilities

Conduit No. 16

NSRWTP Site



NSRWTP – Table of Organization



Design Packages

- **DP#1 – Site and Civil Improvements**
- **DP#2 – Treatment Process Systems and Structures**
- **DP#3 – Electrical, Instrumentation & Control Systems**
- **DP#4 – Ancillary Treatment Process Systems and Structures**
- **DP#5 – Architectural and Building Systems**
- **DP#6 – Post-tensioned Water Storage Tanks**

DP#1 – Site and Civil Improvements

MWBE Goal: 15%

- Design Guidance Documents
 - Civil/Yard Piping design standards, specifications, details
- Geotechnical
 - Review existing information
 - Final geotechnical report for entire site
- Transportation:
 - CO HWY 93 Access
 - Site Access Roads
- Civil Improvements:
 - 3D Site map
 - Yard Piping
 - Fencing, gates, stormwater, landscaping, site improvements
- North System Hydraulics
 - Coordination of Ralston Outlet Works, NSRWTP, C16, Moffat hydraulics

DP#1 – Consultant Qualifications

- Prime Consultant on 3 stormwater projects of similar size/complexity
 - Demonstrate familiarity with JeffCo standards
- 3 CDOT highway projects greater than \$10M (each)
- Firm experience with 3 projects creating 3D base maps in excess of 20 acres
- Comprehensive Health & Safety Plan
- Robust QA/QC program

DP#1 – Personnel Qualifications

- Project Manager
- Lead Hydraulics
- Landscape Architect
- Civil Engineer
- Geotech Engineer
- Startup and Commissioning Coordinator
- Specifications Coordinator AutoCAD Coordinator

DP#2 – Treatment Process Systems and Structures MWBE Goal: 2-5%

- Design Guidance Documents
 - Treatment Process design standards, specifications, details
- Process and Structural
 - Review water quality goals
 - Headworks, Coagulation, Flocculation, Clarification, Filtration, Disinfection
 - Operating/Build-out analysis 10-150 MGD expandable to 250 MGD w/ potential future unit processes
 - Hydraulic analysis and NSRWTP hydraulic grade line model
- Sustainability Analysis
 - Cost, schedule, feasibility/alternatives analysis for sustainability ratings

DP#2 – Consultant Qualifications

- Prime Consultant for at least 3 W/WWTPs greater than 75 MGD in the last 10 years. 1 of those greater than 100 MGD.
- Experience with high-rate media filters (greater than 8 gpm/sqft)
- Experience with UV, Ozone, GAC unit process design greater than 75 MGD in the last 10 years.
- Comprehensive Health & Safety Plan
- Robust QA/QC Program

DP#2 – Personnel Qualifications

- Project Manager
- Lead Process Engineer
- Startup and Commissioning Coordinator
- Specifications Coordinator
- AutoCAD Coordinator

DP#3 – Electrical, Instrumentation and Control (EI&C) MWBE Goal: 4-8%

- Design Guidance Documents
 - EI&C design standards, specifications, details
- Electrical Power
 - Assist with Sustainability analysis
 - Primary feed, distribution loops, standby power
 - Equipment power feed, starters, drives
- Instrumentation & Controls
 - Field instruments, Industrial Control Systems, Programmable Logic Controllers, SCADA networks
 - Equipment controllers/interfaces
- Communications
 - Ethernet, wifi networking, phone
 - Servers
- Security
 - Alarms, video, fire alarm system coordination

DP#3 – Consultant Qualifications

- Prime or sub for EI&C design of 3 W/WWTPs greater than 50-MGD in the last 10-years. 1 of those greater than 100-MGD.
- EI&C - W/WWTPs, hydroelectric facilities, UV, ozone, pumping systems, medium and low voltage distribution.
- Experience with distributed industrial control systems, including multiple PLCs with hardwired IO and at least 2 different IO bus technology solutions.
- Experience with power distribution systems, standby power, cogenerators, hydroelectric, automated power control systems for closed transition switching and parallel operation of any alternative power sources.
- Experience with protective relay systems and selective device coordination, arc flash safety.
- Comprehensive Health & Safety Plan
- Robust QA/QC program

DP#3 – Personnel Qualifications

- Project Manager
- Lead Electrical Engineer
- Lead I&C Engineer
- Startup and Commissioning Lead Coordinator
- Specifications Coordinator
- AutoCAD Coordinator

NSRWTP – MWBE Design Outreach Opportunities

Design Package (DP)	Civil Eng. Services	Geotech Services	Survey (3D Base Map)	Traffic Eng. Services	Mechanical Eng. Services	Structural Design	Landscape Architectural Services	Architectural Services	Electrical I&C Services	Interior Design Services	Estimated Construction Cost of DP
DP#1 - Site & Civil Improvements	✓	✓	✓	✓			✓				\$60M
DP#2 - Treatment Process System & Structures					✓	✓					\$95M
DP#3 - Electrical, Instrumentation & Control Systems									✓		\$80M
DP#4 - Ancillary Treatment Process Systems & Structures					✓	✓					\$32M
DP#5 - Architectural & Building Systems					✓			✓		✓	\$30M
DP#6 - Post-Tensioned Water Storage Tanks						✓					\$23M
DP#7 - Moffat Facility Modification	✓				✓	✓	✓			✓	\$10M
✓ Discipline-specific services included in Design Package, which may include opportunities for MWBE participation.											

Proposal Requirements

- Cover Letter (1-2 pages)
- Proposal (20 page limit)
 - Firm's Qualifications Summary (1-4 pages)
 - Statement regarding eligibility to work w/out conflict of interest
 - Project Approach
 - Consultant assumptions
 - Additional work items for DW consideration
 - Detailed Schedule
 - DP Table of Organization
 - Project Team
 - W/WWTP design and construction biographies (1-3 pages)

Proposal Requirements

- Resumes (1-2 pages each)
 - *Project Manager
 - *Lead Process Engineer (DP#2)
 - *Lead Electrical Engineer (DP#3)
 - *Lead Instrumentation Engineer (DP#3)
 - *Startup and Commissioning Lead (DP#3)
 - Startup and Commissioning Coordinator
 - Specifications Coordinator
 - AutoCAD Lead Coordinator
- Price Proposal (separate envelope)
 - Work Breakdown Structure: Task 3: Preliminary Design 0-20%
 - Cost estimate for proposed additional work items
 - 2016 labor rates, indirect costs
 - 2017-2019 Labor rate proposed escalation
 - *Staff penalty

Selection Criteria

- Proposal Review
 - Firm's Minimum Qualifications
 - Proposed Approach (40%)
 - Project Personnel and Experience (40%)
 - Cost and Work Hours (20%)
- Interviews/Workshops
- Final Negotiation

Next Steps

- DP#1-3 RFP
 - Questions via email: June 8, 2016
 - Proposal Due: 11:00 a.m. June 16, 2016
 - Interviews: July 11-13, 2016
 - Final Selection: July 14, 2016
 - Board Approval: August 10, 2016
- DP# 4-6 RFP
 - Advertisement: July 15, 2016
 - Proposal Due: August 15, 2016
 - Board Approval: October 12, 2016

Project Schedule

NSRWTP Project Delivery Tasks		
Major Tasks	Schedule	Status
Task 1: Mobilization	4/2016 - 7/2016	In Progress
Task 2: Design Services Procurement		In Progress
Task 3: Preliminary Design	8/2016 - 3/2017	TBD
Task 4: Final Design	3/2017 - 2021	TBD
Task 5: Construction	2018 - 2023	TBD
Task 6: Close-Out		



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<http://www.denverwater.org/DoingBusinesswithUs/business-opportunities/>